EXHIBIT 1

IN THE UNITED STATES BANKRUPTCY COURT
FOR THE DISTRICT OF DELAWARE

	:	Chapter 11
IN RE:	:	Case No. 01-01139 (JKF)
W.R. GRACE & CO., et al.,	:	Jointly Administered
Debtors.	:	Ref. No. 21556

ORAL AND TELEPHONIC DEPOSITION OF
GARY K. FRIEDMAN, M.D.
JUNE 22, 2009

Oral and telephonic deposition of GARY K. FRIEDMAN, M.D., produced as a witness at the instance of the Libby Claimants, and duly sworn, was taken in the above-styled and numbered cause on the 22nd day of June, 2009, from 9:05 a.m. until 5:26 p.m., before Denise Ganz Byers, RMR, CRR, CSR, in and for the State of Texas, reported by machine shorthand, at the Marriott Intercontinental, 18700 JFK Blvd., Houston, Texas, pursuant to the Federal Rules of Bankruptcy Procedure and the provisions stated on the record or attached hereto.

A P P E A R A N C E S

FOR THE LIBBY CLAIMANTS:
John F. Lacey
McGARVEY, HEBERLING, SULLIVAN & McGARVEY, P.C.
745 South Main
Kalispell, Montana 59901
406.752.5566
jlacey@mcgarveylaw.com

FOR THE OFFICIAL COMMITTEE OF ASBESTOS PERSONAL INJURY CLAIMANTS:
Andrew J. Sackett
CAPLIN & DRYSDALE
One Thomas Circle, NW
Suite 1100
Washington, D.C. 20005
202.862.5000
ajs@capdale.com

FOR THE W.R. GRACE & CO.:
Brian Thomas Stansbury
KIRKLAND & ELLIS LLP
655 Fifteenth Street, NW
Washington, D.C. 20005
202.879.5969
bstansbury@kirland.com

FOR THE STATE OF MONTANA:
(Appearing telephonically)
Dale R. Cockrell
CHRISTENSEN, MOORE, COCKRELL, CUMMINGS & AXELBERG, P.C.
P.O. Box 7370
Kalispell, Montana 59904
406.751.6003
dcockrell@cmccalaw.com

A P P E A R A N C E S

FOR MARYLAND CASUALTY/ZURICH AMERICAN INSURANCE COMPANY:
(Appearing telephonically)
Gabriella V. Cellarosi
ECKERT SEAMANS CHERIN & MELLOTT, LLC
1747 Pennsylvania Ave., NW
Suite 1200
Washington, D.C. 20006
202.659.6612
gcellarosi@eckertseamans.com

FOR DAVID T. AUSTERN, ASBESTOS PI FUTURE CLAIMANTS' REPRESENTATIVE:
(Appearing telephonically)
Kathleen A. Orr
ORRICK, HERRINGTON & SUTCLIFFE LLP
Columbia Center
1152 15th Street N.W.
Washington, D.C. 20005
202.339.8561
korr@orrick.com

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about Libby lung cancers or Libby mesotheliomas?
A. I have no knowledge. He has published or has done a Mortality Study that includes those diseases. I don't know if it's his intent to link this with this or not.
Q. Just like you don't know what the weather is going to be like tomorrow, do you have any reason as you sit here today to believe he will be doing those things?
A. I've already answered your question, sir.
Q. Okay. So from your perspective, this is, in fact, a study that addresses the full range of all asbestos disease associated with Libby, Montana?
A. I didn't say that.
Q. I'm trying to clarify exactly what you think this study is about because we need to start talking about some specifics regarding it.
A. As you recall, you asked me whether this study was about asbestosis and I've been trying to address that issue, and I responded by asking what you meant by the word "asbestosis" in your question because Dr. Whitehouse's use of that word is different than is recommended by ATS and most of the -- Dr. Lockey and others.
So I wanted to clarify before I

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responded to that question what you mean by "asbestosis," and that's it.
Q. And you did so by reference to asbestos malignancies.
A. No. That has nothing -- those are not asbestosis.
Q. Exactly.
A. Right.
Q. So, again, I'm trying to understand how you interpret this last paragraph.
Do you interpret this last paragraph of the Whitehouse 2004 as suggesting that Dr. Whitehouse is representing to the world it's in literature that this study relates to Libby mesotheliomas or Libby lung cancers?
A. Libby lung cancer and Libby mesothelioma are, quote, "other known diseases historically associated with asbestos exposure."
That is my interpretation and those diseases have that latency period. If that was not Dr. Whitehouse's intent, then I welcome his opportunity to clarify what "other diseases historically associated with asbestos exposure" he is referencing. I'm not a mind-reader.
Q. Okay. Is there any data presented in this

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article as you read it addressing these other asbestos-related malignancies?
A. There's not data, per se, present, but he does cite in his bibliography several authors who have reported on asbestos-related malignancies and he cites their studies. He does not mention it himself.
Q. How many patients did Dr. Whitehouse include in this study?
A. I believe he started with 153 and ended with 123.
Q. How many PFT results did he use in his study?
A. I assume he used 246, because he claims to have used the first and last PFT on each of these individuals, is how it was described, I believe.
Let me check his methodology to be sure. I believe he claims to use the first and last, so that would have been 2 times 123. I don't see that he makes any notation other than that in his study.
Q. Do you have a reason to doubt that that's how many he really used?
MR. SACKETT: Objection as to form.
Q. (By Mr. Lacey) I'm trying to -- I asked you how many he used and you told me he claims to have used this many. You didn't answer the other question that way.

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A. I have not seen the worksheets for Dr. Whitehouse as to how many PFTs he actually used.
Q. What, if any, underlying data regarding the study have you seen?
A. Well, I've seen lots of pulmonary function tests. I've seen reports on all 123 patients. I've seen pulmonary functions on all 123 patients that far exceed the first and last PFT. I've seen pulmonary function results on patients from Dr. Whitehouse's practice, which was originally claimed I believe at 491 and then may have expanded to 550. I've seen pulmonary function studies from that portion of the practice group.
Q. All that data specifically focusing on the PFT results, did you do any of your own math on that?
A. Some, yes.
Q. What did you review?
A. Well, I --
Q. I'm sorry. Not what did you review, what did you subject to your own arithmetic?
A. I looked at the -- basically, I looked at two things.
Number one was the number of plaintiffs who appeared to have more than two PFTs available prior to the November 31st -- I'm sorry --

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the November -- I believe it was November 13th, 2001 date, which was the last PFT I could find entered into the study.

And then I looked at PFT results that were performed on the 123 after the study cutoff date.

Q. Now I need to clarify one thing for you.

Do you understand that not all 123 patients in this study are plaintiffs in this lawsuit?

A. I'd have no way of knowing that one way or the other.

Q. So when you characterized them as plaintiffs just now, you misspoke?

A. I was in error. Sorry.

The 123 members of Progression Study.

Q. Why did you look at PFTs after the November 2001 cut-off date?

A. Because when you do a longitudinal study, the recommendation is usually the patients we follow for five or six years and that there may be more than two data points. Typically, they recommend that there be four or five data points. That's number one. It's a methodological issue.

Number two is that Dr. Whitehouse's

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claim is that this is a severe life-threatening disease, that a substantial number of patients will die because they have a progressive disorder.

And if we're going to do a service to our communities, as you suggested earlier, I wanted to make certain that after the study that people continued to progress, so I looked at what happened after he cut the study off in 2001 to see whether some of these people who had progressed actually improved later or whether they progressed at the same rate or if they stabilized.

Q. The first question, what's the basis of your opinion or what authority do you have for this recommendation, methodological about five years and more than two data points for longitudinal study?

A. I believe -- Can I have a moment to check?

Q. Yes.

A. There are several sources I used.

One is the American Thoracic Society had a workshop on longitudinal studies on methodology.

The second source is -- let me see -- this is the American College of Occupational and Environmental Medicine Physicians' Statement published in the year 2000. James Lockey, by the way, was the chairman.

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It says -- the pages are not numbered -- "Small changes over time will not be detectable if the spirometer and testing technique are not as accurate, precise, rigorous and standardized as possible."

We'll get back to that.

"The highest degree of spirometer accuracy and precision is needed for serial spirometry measurements. Estimated rates of change over time for individuals are highly variable and should be calculated using at least four to six years of test results to increase the precision of the estimate."

And that was Dr. Lockey as chairman.

Q. Do you know how many of these 123 patients, the first and last data points were separated by four to six years or more?

A. The answer to your question is I do not know with certainty.

What I do know is Dr. Whitehouse has indicated that the average follow-up period was 3.5 years, which would be less than even the low end of what is recommended. So as a group, they fall below the recommendations of four to six years.

And I can find you the other source for

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the four to five data points, I believe. There also was a study by the National Heart, Lung and Blood Institute published by the American Thoracic Society, I believe Dr. Buckley was chairman, which spells out the methodology which is to be used in longitudinal studies.

Q. Can I see that?

A. Certainly. The quotes are on the very last pages.

Q. Can I look at this at a break?

A. Sure.

Q. I don't want to take the time to write it down.

What did you find in your review of these subsequent PFT results?

A. There are a substantial number of patients who actually improved. I can't give you the exact number. But if you were to select PFTs after November 2001 and compare them to the last PFT that was performed prior to November 13th, 2001, there are probably 15 or so cases -- I don't want to be precise on the record, I'll have to get that for you -- that could demonstrate one or more spirometric studies that improved or one or more diffusion capacities that improved or one or more total lung capacities

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that improved.
Q. Did you do this in a database or spreadsheet?
A. I have a database, yes, sir. I have a hard copy. I don't have the electronic.
Q. When you say you don't have it, it no longer exists or you just don't have it with you today?
A. I did not do it at my own facility. I have a printout, but I don't have the electronic.
Q. Where was it done electronically?
A. It was done in my capacity as a consultant. I don't know if I can reveal any of the details as to where it was done.
Q. As a consultant in this litigation?
A. As a consultant in the criminal litigation.
Q. For W.R. Grace?
A. Correct.
Q. You mentioned -- again, I'm not holding you to this number specifically, but the number you gave was 15 may have improved in one way or another.
A. Yes.
Q. Do you know how many of those 123 died after November 2001?
A. No, I do not.
Q. Would you be surprised if a number approaching 15 or more of the 123 patients died after

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November 2001 of an asbestos-related disease?
A. Given that the average age at the termination of the 2001 study was about 70 years old and given what the average life expectancy is in this country, that between 2001 and 2009 the average age for the study would be approximately 78 at this time, I would be shocked if a substantial number had not died from some causes during that period.
Q. You would be shocked if they died of an asbestos-related disease?
MR. STANSBURY: Objection; foundation.
A. Well, number one is that 100 percent of the people in the study are alleged to have an asbestos-related disease. They could have all had some other health issue.
If you have 100 people -- 123 people, all of whom -- 123 people, all of whom have some disease process, and if you say 15 died, that would be about 8 percent of 123 -- no, I'm sorry -- 14 percent, 15 percent, something like that.
The fact that 15 percent of any population dies between age 70 and age 78 I don't find that surprising at all.
It means that 85 percent of your population is still alive at age 78, which is far

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beyond the life expectancy of the United States. I think that's the more impressive issue.
Q. Okay. Do you know as you sit here based on any review you've done on things -- I'm not going to ask that.
Any other math or calculations or review of the underlying data that you did in this case beyond what you've already mentioned?
MR. SACKETT: Objection.
A. Well --
MR. SACKETT: That's overbroad.
THE WITNESS: I'm sorry.
A. I've reviewed every aspect of this study.
Q. (By Mr. Lacey) Let me -- Yeah. Did you perform any of your own calculations?
A. The answer is yes. Well, I performed -- I submitted the information medically to a data entry person who entered the calculations. I reviewed the reports that were generated and I assume responsibility for those.
Q. Did you present those findings to anyone other than W.R. Grace in the criminal trial?
A. No. I was purely a consultant to Grace.
Q. Did you testify in the criminal trial?
A. No. I was not asked to testify. I was hired

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as a consultant.
Q. Do you know where those reports are now? Are they still in your possession?
A. Yes.
MR. STANSBURY: I'm going to object to anything further about his consulting work done for W.R. Grace.
MR. LACEY: Okay. The objection is there. We'll get the answer.
Q. (By Mr. Lacey) Do you still have those things in your possession?
THE WITNESS: Am I allowed to respond?
MR. LACEY: This isn't privileged.
MR. STANSBURY: To the extent he has done privileged consulting work for W.R. Grace and his work for the ACC, we are asserting that Grace still holds that privilege and we are not waiving that privilege.
Q. (By Mr. Lacey) This is obviously the kind of thing that unless he's going to instruct you not to answer we'll talk about specifically.
MR. STANSBURY: To the extent that the answer requires you to reveal any privileged information exchanged between you and W.R. Grace, I would instruct you not to answer, to the extent that

it calls for you to reveal any information about the privileged consulting work you've done for W.R. Grace.
Q. (By Mr. Lacey) And I'm simply asking you if you still have in your possession -- I'm not asking you about the contents of those things which you've already talked about. Do you still have those in your possession?
THE WITNESS: Is that a privileged answer?
MR. LACEY: It's not a privileged answer and you know that.
MR. STANSBURY: Repeat the question.
Q. (By Mr. Lacey) Do you still have the calculations that you performed on the underlying data that you received on these 123 patients?
A. I have a hard copy of the computer printouts that identify patients. I do not have any calculations, per se, but I have -- I may have some calculations.
I do have a copy only of the printout that identifies patients who meet a certain criteria such as those who had PFTs after a certain date and the date of the PFTs.
Q. And did you do a similar review like that

beyond the 123 patients in this study?
A. Yes.
Q. Do you know how many patients that involved?
A. Again, this was work that was done as a consulting expert for Grace and I do not want to divulge anything that is privileged.
Q. I'm just asking you whether you did the work. There's certainly no privilege in the fact that you did the work.
MR. STANSBURY: To the extent you're asking about work done for the ACC in connection with the bankruptcy, obviously you can answer that.
To the extent he's inquiring about the specific work you performed for W.R. Grace and your role as a consultant for W.R. Grace, you should not answer those questions.
Q. (By Mr. Lacey) Are you aware that at this point in this bankruptcy proceeding W.R. Grace and the ACC are joint plan proponents?
MR. STANSBURY: Objection. Beyond the scope of his expertise.
MR. SACKETT: Also, objection; it calls for a legal conclusion.
A. I'm not sure in what capacity that the two of them -- when you say "plan proponents," what do you

mean by that?
Q. (By Mr. Lacey) If you don't know, that's fine. I'm just asking for what you know.
MR. STANSBURY: Same objection.
MR. LACEY: It's not a new question.
A. I'm not familiar with the term. Whether they have a common goal or something, that's possible.
Could we take a break on this issue of privilege so I can speed things later as to what I can divulge and what I can't divulge?
Q. (By Mr. Lacey) Again, I'm not going to say we can't take a break, but this is not something that you need to consult with counsel about. I don't mind taking five minutes if you want to do that for whatever reason.
Yeah, we'll come back in five minutes.
A. Would you object to me asking --
Q. We'll just leave it at that, we'll take a break for five minutes. I'm not going to promise you the kinds of questions I'm going to ask.
A. No. You can ask for whatever you want.
MR. STANSBURY: Are we off the record?
MR. LACEY: We are off the record.
(Recess 11:25 until 11:33.)
Q. (By Mr. Lacey) Do you know Steven Haber?

A. Yes, I do.
Q. Who is Steven Haber?
A. Dr. Haber was an employee of mine over at the clinic, and then I sold the clinic and Dr. Haber now owns the clinic and I work for him.
Q. What clinic was that?
A. Texas Occupational Medicine Institute.
Q. Are you aware that Dr. Haber was retained as a medical expert in this W.R. Grace bankruptcy case?
A. Yes.
Q. To your knowledge, was Dr. Haber also retained by W.R. Grace in the criminal trial?
A. I assume he was. I think he may have been both in criminal and the bankruptcy.
Q. Are you aware of the specific work that he did in this case?
A. I've not spoken to Dr. Haber about what he has done in this case. I've seen some reports that were provided to me by the Claimants Committee, but I've not discussed it with him.
Q. You've never talked to Dr. Haber about Libby?
A. We may have spoken a few times, but I try to keep it separated since I was a consulting expert in a criminal matter and was not involved in the bankruptcy matter until I was retained by the

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Claimants Committee.
Q. When was that?
A. April.
Q. April of this year -- or April --
A. Of this year.
Q. April of '09?
A. That's correct.
Q. You had no contact with the Claimants Committee about this case until April of 2009?
A. I believe that's correct, sir. Maybe March. March or April.
Q. Prior to that, you had never spoken to W.R. Grace or the Asbestos Claimants Committee about the W.R. Grace bankruptcy?
A. I'd never spoken to the Claimants Committee, and my last contact with W.R. Grace I believe was in September of '05 on the criminal matter. I believe that's correct.
Q. Are you aware that Dr. Haber went to Libby for a long period of time and reviewed x-rays?
A. I was aware of that, yes.
Q. Were you still practicing at that time?
A. I retired in January of '06, and I don't remember if that was before or after I had retired.
Q. You never talked with Dr. Haber ever about

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Dr. Whitehouse?
A. I may have had some brief conversations with him, but we made it a practice not to communicate about Libby.
Q. Why was that?
A. Well, because I was a consulting expert and I was a consulting expert on the criminal matter and there was sort of a wall between the criminal matter and the bankruptcy.
Q. There was a wall?
A. I mean --
Q. You worked for W.R. Grace and were hired by W.R. Grace and Dr. Haber was hired by W.R. Grace; is that correct?
A. In different capacities.
Q. But you knew that he had been hired by W.R. Grace as well; correct?
A. That's correct.
Q. And this was before September 2005 or at least before you left your practice; correct?
A. That's correct.
Q. And Dr. Haber was your employee at that time; correct?
A. That's correct.
Q. And you never discussed W.R. Grace or Libby

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prior to -- during that time?
A. I would not say "never," but if we did, it was very limited as far as our conversations go.
Q. What would you have discussed in the limited capacity?
A. I don't recall. The only clear recollection I have was -- I'm trying to remember what year it was. It may have been May of '06.
I had a heart attack and then had angioplasty and cardiac cath and I was in the intensive care unit, and I believe that was May of '06, or it may have been May of '05. I don't recall. I think it was May of '06.
And he came -- I was in the intensive care unit and I told him in case something happened to me just some of the things I had been working on in case he needed to take over, because I didn't know what was going to happen at that time. I just had an angioplasty and stent and was in the ICU, and I recall that conversation.
We may have had one or two others, but we pretty much --
Q. That was May 2006?
A. It may have been.
Q. As I understand your testimony, you stopped

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working for Grace in September of 2005?
A. It may have been September 2006. I'll have to go back and check my calendar. I'm not clear which of those two years it was. At the time -- I was still working for Grace at that point in time.
Q. As was Dr. Haber?
A. That's correct.
Q. How many doctors are at your clinic?
A. Three.
Q. How many support staff?
A. Currently, three.
Q. To your knowledge, did Dr. Haber prepare any reports for W.R. Grace?
A. I've been provided some reports from the Claimants Committee. Those are the only ones I'm aware of.
Q. To your knowledge, did your clinic staff prepare those?
A. It's not my clinic staff. It ceased being my clinic staff on January 1st, 2006.
Q. Prior to that, the clinic, yours or Dr. Haber's, did the clinic staff prepare Dr. Haber's reports?
A. They would -- I assume they would have unless Dr. Haber -- sometimes he does his own typing. So

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this progressive loss of lung function that his parents are going to die.
A. A substantial number of them. I believe he said either 50 or 75 percent, at least in one of his affidavits, or one of his prior expert reports.
Q. This is the same piece of testimony that you believe he offered in other cases that you can't point me to directly but you think he said it?
A. That's correct.
Q. But you don't know where?
A. I believe it was either in an expert report or an affidavit.
Q. Does his report, his 2004 study, make any representation about mortality?
I'm going to read to you the same language you read to me before. "It is apparent from these data the majority of the 1,500 patients who have radiologic changes of asbestos exposure are at increased risk for progressive loss of lung function from pleural changes alone or from potential development of interstitial fibrosis."
And then a little bit more, "It is not unreasonable to expect that the people who live in Montana will have to be monitored over the next 30 to 40 years because of the risk for loss of pulmonary

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function and other known diseases historically associated with asbestos exposure."
Do you read that to make a statement of prediction regarding mortality?
A. Again, his statement came either from an expert report or an affidavit.
It's my understanding that that's really the crux of your case, is he's alleging that these Libby patients have a worse prognosis than other patients affected by the dust.
I mean, isn't that the claim?
Q. Again, you've made very clear you don't want to know about very significant legal things, so at the request of your counsel I'm going to stay out of telling you what this case is about because --
A. Okay.
Q. -- they're going to object.
So let's look at the specific data errors that you believe were injected by Dr. Whitehouse.
A. Okay.
Q. Uh-huh.
A. Turn to Page 220 of his report.
Q. Yes.
MR. SACKETT: Just to clarify, you mean

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his 2004 article?
THE WITNESS: Correct. Sorry.
A. I'm sorry. 2004 article, Progression Study.
Q. (By Mr. Lacey) Thank you.
A. Starting at the top of the second paragraph, number one, he says, "The studies prior to 1998 were performed on a Sensormedics Model 6200 and subsequently on a Medgraphics Model 1085."
Again, in a longitudinal study you should keep the testing equipment constant because there are differences between pulmonary function equipment and manufacturers that may exceed the decline that Dr. Whitehouse is alleging caused by patients.
Q. How many of the 123 patients were tested on one machine and then the other PFT result was on a different machine?
A. I do not know the answer. I do know that -- I believe that the change occurred in about 1998 or '99 and those patients tested prior to that time would have been tested on the Sensormedics and those after were tested, when they had their -- that's your problem, is that you've got your first test on the Sensormedics machine and your last test on a Medgraphics machine, possibly. Okay?

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Q. You don't know how many, though, but possibly?
A. Correct.
Q. Okay.
A. And there's a reason I say "possibly."
Q. And is there -- in your experience as a pulmonologist taking into account the PFTs are inherently designed to deal with people and assess their impairment at the moment, evaluating all of those other computer models and data, is there something that is inherently wrong with either the Sensormedics Model 6200 or the Medgraphics Model 1085 that you can't trust the result that it produces?
A. Yes.
Q. What is that?
A. Number one is when we say "test the results," for purposes of scientific reporting you may need a different level of precision than you do in the day-to-day management of a patient.
In other words, it may not affect my therapy much if there's a 3 to 5 percent difference between machines if I'm simply treating a patient. If the purpose I'm using these machines is for a scientific investigative study, there must be precision, and there is an inherent difference

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between these two pieces of equipment.
The Sensormedics 6200 used what was called an anemometer, which measures these values through flow, and there's flow across a heated wire and the change in the heated wire is then reflected in pulmonary function values.
The 6200 is an obsolete piece of equipment that Sensormedics had some problems with. They discontinued it. You can no longer get replacement parts for it.
Q. When did they discontinue it?
A. I'm not sure exactly what year, but I called and talked to Sensormedics.
I'll tell you how old it is. It operated on a DOS operating system.
Q. You talked to them in relation to your opinion in this case?
A. Yes.
Q. When was that?
A. I talked to them in the past when I was working on the criminal matter.
Q. But that opinion is valuable and something you're relying upon now to offer an opinion about the Whitehouse 2004 study in this case?
A. That opinion would be yes.

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Q. And did you correspond with Sensormedics?
A. Just a telephone call.
Q. How many?
A. One.
Q. Who did you talk to?
A. I'll see if I have a note somewhere where I wrote down the name of the lady that I spoke to. But I asked them and the equipment used an anemometer and it's been discontinued and it's obsolete.
Q. You can't tell me the date that it became obsolete?
A. I can find out for you or try to find it out. Okay?
Q. Okay.
A. The Medgraphics 1085 I'm very familiar with because that's the type of equipment I believe we have had in our office.
The Medgraphics 1085 operates not on an anemometer but on a device called a pneumotach. And whereas the Sensormedics 6200 measured flow across a heated wire, the Medgraphics measures pressure against a diaphragm with what's called a pneumotach, so one is a flow device and one is pressure sensitive.
The pneumotach operates on a different

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operating system than the old DOS system. It's much more refined and so there would be significant differences between studies done on the old Sensormedics pre-1988 or '9 and the pneumotach from Medgraphics which would be your last studies, possibly.
Q. How often in your experience as a director of pulmonary labs do you have to update or replace equipment?
A. Every eight to ten years or so they wear out or become obsolete or they develop new equipment.
Q. Okay.
A. So that is a serious issue here when you're supposed to keep everything constant.
Now, the bad news is that Dr. Whitehouse has represented that studies prior to 1998 were performed on a Sensormedics Model 6200 and subsequently on Medgraphics Model 1085.
In fact, there are probably at least ten or more other pieces of equipment that measured PFTs during the time frame up through November 13th, 2001.
Q. And those ten or more pieces of equipment, did they generate specific PFT data that you know were relied upon among the 246 data points in this study?

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A. Some of them.
Q. Which ones?
A. Well, I need to finish my answer.
Some of them appear to be the latest PFT prior to November 13th, 2001. I can't give you a precise number, but there are -- what Dr. Whitehouse tells us is just these two pieces of equipment were used when in fact people had PFTs done by National Jewish, they had PFTs done by various hospital labs, they had PFTs done in other cities that were not performed on either of these pieces of equipment.
Q. And you can't tell me which ones?
A. I could try and go back to the medical records. I can identify these people, but I'd have to go back to the records.
Q. Here's my concern --
A. Yes.
Q. -- Dr. Whitehouse has represented, not without consequence and consideration, that his study was conducted a certain way.
A. That's correct.
Q. To the extent you believe you've gone through this line by line, I can assure you that Dr. Whitehouse, in putting his name out there scientifically and by reputation, validates the

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(Friedman Exb. No. 5 was marked for identification.)
MR. LACEY: And that represents the CD PowerPoint that I was provided by counsel.
Q. (By Mr. Lacey) Looking at the "Conclusions" page of the Whitehouse '04 study --
A. And I'm not finished, by the way.
Q. Okay. By all means, tell me what the other issues are.
A. Dr. Whitehouse -- let's go to the -- just kind of sentence by sentence.
It says, "All studies were done before and after bronchodilator using Albuterol."
That's not a correct statement.
Q. As you interpret the data?
A. No. The PFT forms have a section that says "Pre-bronchodilator" and a section that says "Post-bronchodilator," and there are some studies -- and I don't believe I have those today, some may be on one of these PowerPoints -- where bronchodilators were not administered.
Q. What I need to be clear about here, you've reviewed far more than 246 PFT results; correct?
A. Yes.
Q. And so as you sit here today, you can't

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necessarily identify which PFT results were relied upon by Dr. Whitehouse in this study, can you?
A. To the best of my ability, I can identify first and last, the least that I had.
Q. Then I guess I have two questions.
A. All right.
Q. If there are data points anywhere between first and last on a particular patient, did you exclude them automatically from the opinions you're making now about post-bronchodilator not being true?
A. The statement, "All studies were done before and after bronchodilator utilizing Albuterol" does not specify that they were the first and last studies. The word "all" is all-inclusive.
Q. Why would Dr. Whitehouse make a representation about studies that aren't relevant to the results he's reporting here?
MR. STANSBURY: Objection; speculation.
A. I can't speculate.
Q. (By Mr. Lacey) But you're saying that he's wrong because you're interpreting "all studies" to mean all studies over time, not all studies relied upon in this study?
MR. SACKETT: Objection; misstates the testimony.

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Q. (By Mr. Lacey) Please clarify for me how you're interpreting "all studies."
A. I interpret -- when it says -- again, the preceding title of this paragraph is "Material and Methods," and nowhere does he say that -- under "Materials and Methods," nowhere prior to the statement "All studies were done before and after bronchodilator utilizing Albuterol" does he say "just all first and last studies." He says "all studies."
Now --
Q. You might be right.
A. Right.
Q. It doesn't matter.
A. Right.
Q. It doesn't matter.
A. So that's how I interpret it.
Q. I'll give you that point. But does it matter if what found its way into this study is first and last? Does it matter that a middle study that never found its way into the study -- and we're being sloppy with what we mean by Whitehouse study and PFT study, so I'll be clear.
Does it matter if a PFT study that is not the first or last PFT result on a particular subject of this 123, does it matter at all if it was

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done on a different piece of equipment, if it was done without post-bronchodilator if it never made its way as a point of data that Dr. Whitehouse relied upon in his '04 study?
A. Yes.
Q. Why?
A. Well, number one, it clearly to the reader appears that this was done uniformly.
Number two, if you're following a patient in a longitudinal study and one of the -- in fact, the first admonition is to keep things constant, you should be doing every test the same.
Otherwise, is this being biased? How would Dr. Whitehouse ever know what is the first and the last study?
In other words, if you say all studies were done, and, like you say, pick a cut-off point for whatever reason, I don't question that, but if sometimes you do it and sometimes you don't do it, the last time you don't do it may well end up as your last study or it could have been your first study.
So the bottom line is that when you represent that it's all studies, that's one thing.
Number two is for a person who comes along and reviews it, let's say Dr. Lockey would

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review this, unless he had additional information, how would he know which test Dr. Whitehouse chose to put into this report. I don't have all of those dates.

Q. Again, assuming that as part of this study what happened is that Dr. Whitehouse provided 246 PFT results --

A. Okay.

Q. -- to his peer review people, to the journal, et cetera, would you admit that you have access to more records than those people might have because of your role in this litigation?

A. I would admit that I probably -- I don't know what he provided to the peer reviewers. I have no way of knowing.

Typically peer reviewers do not sit down and review every patient's medical record like I have. So the question --

Q. I need to clarify that. Why do you say that?

When you say "typically," what's your experience as a peer reviewer that --

A. Well, in my experience, most peer reviewers will read the article and then maybe look at some printouts of underlying data.

Q. What experience is that? Earlier you

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testified that you don't publish and that --

A. I don't.

Q. -- you haven't been involved as a peer reviewer.

A. Just over the years of talking to the academic community people that do.

Q. Anecdotal?

A. Anecdotal, right. And if I'm wrong, I'm in error. Then my response to your question then is I don't know.

But I know that peer reviewers are not going to sit down nor would they have the time to review the individual records or eight PFTs on Patient 94 and identify that they're all from different labs.

Q. And so, again, when you say that this represents a flaw --

A. Yes.

Q. -- are you saying that it represents a flaw in Dr. Whitehouse's practice, that he is not consistent over time, that he uses eight different pieces of equipment, that he does these other kinds of sometimes post-bronchodilator, sometimes not, he's not fit to run a PFT lab, or are you saying that those inconsistencies, even though they may not enter

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into the particular points of data that were relied upon for this 2004 study, make the study unreliable?

MR. SACKETT: Objection as to form.

Q. (By Mr. Lacey) If you don't understand my question, we'll try to break it down more, but I'm trying to -- I think you know what I mean.

A. Let me answer briefly.

The first part of your question deals with clinical practice. I have no -- absolutely no complaint about Dr. Whitehouse's use of different laboratories in clinical practice. Doctors all of the time have to rely on different PFTs from different sources in the nature of their clinical practice.

That is very different from doing a scientific controlled study which has to be controlled to variables. It also -- so I want to make that distinction.

Number two is the fact of the wording that indicates that only these two pieces of equipment were used.

Number three, I don't think you properly characterized my testimony. I'm not saying that none of the other laboratories were included as either first or last. Some were, some may not have been.

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Q. But you don't know?

A. I believe that based on the data that I've looked at that the 1982 studies, the 1970 studies were the first studies available in the chart, and my understanding was that Dr. Whitehouse was to comply with providing complete records.

Assuming he complied with that, then based on my review of those complete records, these are the first and last that I can identify.

If he didn't provide complete records, then certainly I could be in error.

Q. So as you sit here today, again, you've looked at a lot more than 246 PFT study results?

A. Yes, I have.

Q. You don't know which 246 PFT studies Dr. Whitehouse actually used as a basis for his findings in this study?

A. He represents first and last. I've tried where possible to identify those. If that's -- if my identification is not correct, I've made a good faith effort.

Q. Okay. I was going to move on. You said you weren't done yet.

A. No.

Q. So continue if you can.

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A. The next sentence -- I'm just going sentence by sentence in this one paragraph -- "The same technician was used throughout the entire period." Again, that's not a correct statement.
Q. Can you point me to specific records?
A. Yes, sir. It's in the PowerPoint. Let's look in the same PowerPoint we just had.
Q. (Indicating.)
A. Where would Number 9 be? I'm sorry.
Q. Pretty far back. Here it is.
A. Please start on Page 12. I've identified by initials all of the different laboratories and technicians -- or maybe not all, but this is just at least a sampling of one, two, three, four, five, six, seven, eight, nine, ten, eleven, twelve, thirteen, fourteen, fifteen -- I believe fifteen separate technicians who performed pulmonary function testing over the course of the study and then there were some where the technician couldn't be identified.
Q. Keep that page available to you.
A. Sure.
Q. 15 technicians, are those all on the same patient?
A. No.
Q. Are they all -- how many different patients

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is that?
A. I would assume that they're -- I believe that they're mostly on different patients.
Q. So fifteen different technicians on up to, but some number close to fifteen patients?
A. Yes. It appears that these are all selected from different patients.
Q. Okay. And --
A. I could be in error because -- well, here's one, two technicians on one patient.
Q. What patient number is that?
A. 25. LP25, and I believe -- I can't tell if this is a 52 or 82, but LP52 may have two technicians.
Q. LP25, are those both at the same lab, just different technicians, or different labs?
A. They were -- two of the studies at least on LP25 were both at St. John's Lutheran Hospital.
Q. Again, I'll ask you the same question as before, do you know whether these 15 different --
A. I'm sorry. LP25 also has a technician from National Jewish under the Libby Community Environmental Health Program.
Q. The same question as before, do you know that these 15 different PFT study results were actually

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relied upon among the 246 that Dr. Whitehouse represents in his 2004 study?
A. I do not know, but, again, I am simply demonstrating that there is a statement under "Materials and Methods" which does not indicate that this is applicable to first and last, simply stating, quote, "The same technician was used throughout the entire period."
Q. What period are you thinking?
A. Whatever period Dr. Whitehouse is referencing.
Q. Does it go back to 1974 with the date that you first identified to 2001?
A. If that's when the first test occurred.
Q. You're interpreting these in a number of finite ways and I want to know how you are interpreting the other things that are open to ambiguity.
What do you use to interpret "entire period"?
A. Dr. Whitehouse indicates that these patients were followed for at least 14 years, the average 3.5, but I believe he indicated somewhere I've seen at least 14 years for among the longest, which from 2001 would put it back to '87, and there may be longer.

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I'm not sure where he was counting from. But if in fact -- if I've got PFTs that are supposed to be the first PFT and I have a PFT that's supposed to be the last PFT and if in fact Dr. Whitehouse used the first and last PFT, then whatever that period is would be what I would assume that period would be.
(Phone ringing.)
Q. Again, we're assuming -- you're assuming that all of these LP patients were actually among the 123?
A. They were all represented as being among the 123, yes.
Q. Represented to you by counsel?
A. That's correct.
Q. As a part of this 550 master?
A. Correct.
Q. Any other things? You were going sentence by sentence.
A. Yes, sir. "Lung volumes and DLCO were measured after bronchodilator." Again, that's not completely true. I've got examples that are present probably in Number 9 that will demonstrate that DLCO and lung volumes were not always measured after bronchodilators.
Q. How many?

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A. I'm not sure how many and I don't represent that these are complete -- all examples. These are simply for demonstrative purposes, these PowerPoints. There may be other cases as I review records.

Q. Why would you have pulled out some of them and not all of them?

A. Because if these were supposed to be used as demonstratives at trial, they are very similar and there's no reason to sit and show 15 or 20 slides of the same thing.

Q. When did you create these PowerPoints?

A. I started on some of these during the criminal case, but I've updated them or have amended them in conjunction with the work with the claimants on most of these.

Q. Would you agree with me that on a study such as Whitehouse 2004 with up to 123 different subjects that there is a substantial difference in terms of evaluating its reliability between pulling out every case of error about post-bronchodilator and an example of one or two or three? Is there a difference there if the real number is something much greater?

A. I don't understand that question at all.

Q. If the study of 123 subjects -- if you're

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right, and I'm not saying that you are because I know, like I said, there are questions of fact between you and Dr. Whitehouse about this -- but if you're right and certain PFTs were conducted and incorporated in this study among the 246, not using the same --

A. Technician.

Q. -- technician, if that number of 246 is a 6, don't you think that means something about the reliability versus if the real number is 60 that were not used using the same technician?

Isn't the one that just had 6 with a different technician far more reliable than the one that had 60 without the same technician?

MR. SACKETT: Objection as to form.

A. Again, the answer to your question is if you had the less degree of variability you have in a longitudinal study, the better it's controlled and the less likely there is for error.

The purpose for these observations is to simply show that many things line by line have demonstrable facts that don't seem to be in concert with the way the paper is written.

Q. (By Mr. Lacey) As a matter of design -- again, I want to draw a distinction here, there's a

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difference between design and implementation -- and reliability because it was poorly designed is one issue, reliability because it was not implemented and what's represented in the paper is just wrong is a different issue.

Would you agree with me on that?

A. I can see where you would think there would be two different issues, yes. There's a relationship, but I would --

Q. I understand there's a relationship and I'll concede that, but if we want to talk about reliability of the data that's been reported -- and understanding that the design may force us to inject certain limitations upon what that outcome means from the study -- but if there's a reliability question about how the data was actually used, is it your opinion that simply throwing a couple of examples out is sufficient or equivalent to demonstrating reliability that you could have shown but you just didn't on a much broader level?

MR. STANSBURY: Objection.

MR. SACKETT: Objection.

MR. LACEY: Yeah.

Q. (By Mr. Lacey) Again, I'll just use flat numbers. 246 PFT studies were represented to be

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relied upon by Dr. Whitehouse in this study; right?

A. Right.

Q. Say six of those PFT studies used a different technician than the other 240.

A. Okay.

Q. That would lend a certain degree of reliability, not 100 percent, but it would suggest a certain degree of reliability based on that one variable; correct?

A. Based on that one variable, yes.

Q. Yes. If instead of talking about 6 out of the 246 that used different technicians we had 46, wouldn't you agree that the study based on 200 as opposed to 246 using the same technician is far less reliable than the one that actually used the same technician in 240 out of 246?

A. The answer to your question is, based on that example, the less variability, the more reliable a longitudinal study would be.

Q. That's design. I'm talking about implementation.

A. You've got me confused now, because I thought you were talking --

Q. I'm talking about implementation.

A. Okay. Well, my answer is the same.

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Q. It's either perfect or it's unreliable.
A. No. No. That's not what I'm saying.
I'm going to bifurcate my answer two ways.
Q. Okay.
A. Number one, the question is if I'm a peer reviewer, and I'm going to pretend -- let's say I don't know what peer reviewers do. If I was a peer reviewer, I would say, "Okay. This doctor tells us that there were studies between 1998 and prior to that time on one type of machine that used the old DOS system and an anemometer, flow-driven, and those were his pre-studies, everything before 1998, and the last studies had to have been done on a Medgraphics after that time, so at the very least we've got two very different types of equipment, is there going to be a problem? There certainly could be.
Now, all of a sudden I find that there might be X number of additional types of machines and very different laboratories, and I'm conscious that the design of study calls for longitudinal studies to have reduced number of variables, laboratory technician and equipment, that's kind of problematic, but let's put that aside.
Now, the next line says, "All studies

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were done before and after bronchodilator utilizing Albuterol" and we find some studies that didn't meet that, I say, "The guy is making representations here that don't quite fit with these records."
Then the next sentence says, "The same technician was used throughout the entire period," and I can document 12, 14 different technicians that were used in addition to multiple different laboratories, now that really compounds everything.
And then finally that "Lung volumes and DLCO were measured after bronchodilator," I say, "Well, yes, on a few occasions he didn't, but" -- so we now have four or five different sentences all in the one short paragraph that don't seem to match the data we have.
I would think now the burden would be on Dr. Whitehouse to say, "Wait a minute. Here is the data I've used in my study and these are first and last and it didn't have an impact."
Q. As you sit here, do you have any reason to believe that the burden wasn't on Dr. Whitehouse and he did not sufficiently demonstrate enough reliability to make these representations to the peer reviewers' satisfaction?
A. I have no idea one way or the other. I don't

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know what he represented. All I know is --
Q. And part of that is because, as we've talked about here the last little bit, you don't know whether the eight different labs were ever actually used in this study; correct?
On the one patient, LP -- whatever -- LP94 who saw eight different, you don't know -- obviously all eight weren't used because the first and last were used.
A. Correct.
Q. And you don't know whether these studies, for example, LP25, where there were three different technicians on three different tests, you don't know which, if any, of those three different technicians and tests actually found their way into the 246? You don't know that?
A. Again, on some cases where I could identify which was first and last, I do know.
Q. You're giving your best effort? That's what you told me before?
A. Correct.
Q. Good faith, best effort to try and identify that?
A. Correct. In some cases, they may have fallen in between first and last.

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But in either case, using Dr. Whitehouse's own words, those --
Q. As you interpret them, because, again, we've already established that we can disagree or have different interpretations about what "entire period" means or "all studies" means, can't we?
A. If you want -- obviously I could disagree with almost anything, but, you know, the way I read the word "all studies" means all studies.
And before I was cut off, I started to say in Dr. Whitehouse's own words, by his own admission, if the first study was before '98 and the last study was after '98, we know for a fact that they were done on different pieces of equipment, excluding --
Q. If the first and last were done straddling 1998?
A. Exactly. And I will represent to you that my recollection -- I can't give you a precise number, but a substantial number of cases were performed before and after 1998.
Q. And, again, I think it's very important that we draw a distinction here because you and I both know where this is going.
Reliability about this study has

A. Yes.
Q. Being able to trust how a specific technician has administered the test over time can be very valuable to you as a pulmonologist?
A. You want consistency.
Q. During the course of your directorship of these various PFTs here in Houston, were any of your respiratory technicians recognized nationally among their piers as among the best in the country?
A. I don't recall any of them seeking that award, no.
Q. They weren't recognized? They may not have sought it, but they weren't recognized?
A. To the best of my knowledge, that's correct.
Q. Do you have more things you want to go through sentence by sentence?
A. Yes.
Can we just take a brief break again?
Q. Sure. Five minutes.
(Recess from 3:40 until 3:43.)
Q. (By Mr. Lacey) You were going to show me the next sentence where you believe there's --
A. Right. Since we're talking --
Okay. We'll just kind of keep going sentence by sentence.

The next sentence is not quite completely accurate either. It says, "Normal values of pulmonary function results used spirometry as described by Knudson et al. (1983)."
Actually, there were several different sets of different predicted values that were used in this study and Knudson's own predicted values changed, and I believe they were different between the -- it appears that they were different between several of the computers when they changed equipment, so that that automatically built in a problem with using predicted values in a longitudinal fashion in that they didn't use the same sets of predictors.
Q. Can you tell me where Knudson's were not used?
A. If we can go to the --
Q. Are you on Number 9 again?
A. I believe so.
Q. It looks like Page 18.
A. Patient LP46 is an example.
Q. How many different PFT studies there do you have depicted for Knudson?
A. I'm sorry?
Q. For that LP46, how many different PFT studies are you relying upon?

A. I'm relying on one that's dated April 21st, 1988.
Q. April 4th, 2006?
A. It will be on Page 18, the left hand of the document.
Q. Uh-huh. April 5th, 2006. Again, can you give me any assurance that these PFT studies were actually used among the 246?
A. The one, LP46, 1988, may have been the first study since this goes back about to the time frame when he says they were 14 years or so. I can't assure that it was.
But it was done on the computer that was in the office of Dr. Whitehouse at that time and it will show a variation between the predicted values being used at that time and Knudson's own predicted values, which the right-hand predicted values were run on our computers and represent what the Knudson should have been.
If you then go to the Medgraphics used after 1998, it matches up perfectly with our Medgraphics of the same model. So it shows that either these earlier studies were not done by Knudson or done by a different version of Knudson and when they changed computers, they also changed predicted

values.
Q. So you, in addition to running additional math on this data, it sounds like you also recreated PFT results; correct?
A. No, we did not recreate PFT results.
What we did was enter the age, height, sex, race into our computers and generated -- chose Knudson controls and generated predicted values to then compare against the predicted values used by Dr. Whitehouse.
We didn't try to recreate the actual values that he generated, but we did try -- we did create a set of controls in our offices, and I will continue to do that for the claims folks to show where Dr. Whitehouse in fact did not use Knudson.
Q. And how many patients did you do that for?
A. I do not know the answer. Enough to confirm where we didn't know that some cases were not being judged by Knudson.
Also, every case that was done by National Jewish I believe as part of the ATSDR, they did not use Knudson, they relied on Crapo, so all National Jewish cases used Crapo. And when they went to different outside laboratories, different predicted values were used on some of those other

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than Knudson.
Q. Again, can you tell me how many of those Crapo were used among the 246?
A. I'd have to go back and recalculate that going through the records. Off the top of my head, no, I cannot.
Q. Same thing, can you tell me how many of the ones that you had concerns about Knudson -- and I'm assuming since you knew ATSDR was not Knudson you didn't run those -- how many of the others did you run?
Was it just this LP46 as an example and then you stopped, or did you run 100 of them and find just LP46?
A. I believe LP43 and then I included LP25 as an example, the National Jewish.
Q. So LP43 and LP46 were two that did not use Knudson?
A. I'm sorry. The LP --
THE WITNESS: Can you read what the date is on that?
MR. SACKETT: Let me see -- 7-27-1999.
THE WITNESS: Okay.
A. The purpose -- and I think this is very instructive because it can be applied broadly --

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LP46 --
THE WITNESS: Can you make out what the date on this one is? I've got this here. I'm sorry.
A. LP46 --
MR. SACKETT: Do you want me to get the original slides?
THE WITNESS: That's okay.
A. -- shows two different examples I believe on the same patient where Knudson was not used, and LP -- I'm sorry -- LP43 is in 1999 after they got their new computer that shows where a different set of predicted values for Knudson was used.
Q. (By Mr. Lacey) What I'm wondering is whether you did this analysis, this hindsight check on all patients, on just a couple of random ones, whether you stopped when you hit 46 because you figured you had two and it's enough to demonstrate? How do I know?
A. There are other examples. I just can't give you the number.
Q. Can you tell me --
A. And we have many examples where tests were done in other laboratories in addition to National Jewish where Knudson was not used as a predicted value.

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Q. Can you tell me which LPs those are? Do you have these in a database?
A. I'd have to go back, I think, and reconstruct it. I don't know if I have that one in the database or not.
Q. So it's your opinion that once you found one or two --
A. That's not what I said.
Q. I'm trying to clarify here.
At what point here is a problem, one, LP46, whatever -- is reliability -- I guess what I'm getting at here is, is reliability a threshold thing where once you hit it, you're done and forget it, why worry about demonstrating all of them, or is there a range here where LP43 and LP46 shows you a little bit of unreliability but we've got ten others that show more reliability -- more unreliability and that's what I'm relying upon?
MR. SACKETT: Objection to form.
A. What I was trying to establish, I think we have other examples, I have other examples. I'll just have to go back and reconstruct it.
There are at least two separate issues.
Number one is when Dr. Whitehouse changed computers in 1998 whether the Knudson

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predicted values in Computer Number 1 were the same as the Knudson predicted values in the new computer post-1998.
Q. (By Mr. Lacey) Which essentially goes to that same issue that we talked about with the different equipment?
A. Well, one is -- not really, because one is a hardware issue and one is a software issue.
Q. But it's pretty related? If they hadn't switched computers or hadn't switched model, we wouldn't have the same worries?
A. Well, it goes beyond that --
Q. Okay.
A. -- because the pieces of equipment were very different. One measured flow and one measured pressure. One was a pneumotach and one was an anemometer. Those are hardware issues.
The Knudson came out with a new set of predictors that were incorporated in the second computer, so there may be more than one set of Knudsons that were used.
Q. Can you give me a date on when that happened for Knudson?
A. I cannot give you a date. I'll have to check that.

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Q. Okay.
A. A totally separate but related issue is that where patients were tested at these other laboratories, other predicted values were used. We've mentioned -- one example being National Jewish and Crapo.
I'd have to go back and look at all of the different labs and identify, where possible, what predictor was used or whether they identified it as being Knudson.
Q. And we catch every single one of those, I assume, under this other concern you have about different technicians; correct?
A. No. No.
Q. So the same technician that may have done tests in Spokane or in Libby traveled to National Jewish and was involved in those?
A. Correct, but that -- No. What I'm saying is that you can have one technician go to ten different hospitals and at every hospital you'd have the same technician, theoretically, but using different pieces of equipment, which would be a problem, and the same technician using different predicted values, which would be a problem.
Q. Right now I don't want to talk about

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theoretical design risks. I want to talk about tangible specific record-based errors that you found among Dr. Whitehouse's study base.
And so, again, I'll give you what you found or what you're saying you found that ATSDR, National Jewish used the different models, not Knudson, or different norms, not Knudson?
A. I'm sorry?
Q. They used Crapo?
A. Correct.
Q. Okay. If you can tell me right now that those ATSDR National Jewish PFT studies were among the 246, I understand your point. If you can't tell me that, then I guess we have to move forward.
As I understand it, you can't tell me how many of those National Jewish might be among the 246?
A. And not only National Jewish, but if you'll recall, under a separate issue when we talked about different laboratories and different pieces of equipment, there is no indication that Knudson was used on any of those.
Q. Exactly. So that this issue about Knudson, while it's independently worth noting, is not necessarily a stand-alone issue? It's caught up,

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it's cumulative?
A. It is a stand-alone issue.
Q. But there's not going to be any Knudson, other than these potential ones in Dr. Whitehouse's own lab with the computer --
I want to find every patient that you believe reflects a different technician, a different piece of equipment, a different Knudson norm, a different -- something different than what Dr. Whitehouse has said.
And so I know you've tried to do that as best you can, but one of the things you told me is you stopped after a while because you're making a PowerPoint for a jury and you don't need to do it all.
MR. STANSBURY: Objection.
A. That's not what I said at all.
MR. SACKETT: Objection; that misstates his testimony.
A. I told you that I have simply provided demonstrative aids. It does not mean that I stopped at that point. That's a mischaracterization of what I said.
Q. (By Mr. Lacey) Okay. Then I'm glad you clarified that because I wasn't sure that was true.

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How many are not in your demonstrative aids? You've told me about LP43 and LP46. You've told me about LP25. These are the three specific examples in your demonstrative aids for Knudson not being used.
How many of the 246 were not based on Knudson?
A. I cannot give you a total number. I'm looking at, under Number 9, the different laboratories that were used to see which ones identify the predicted values.
I couldn't find that any of the other laboratories identified Knudson. Some simply did not identify a predicted value. I'd just have to go back and research that. I can't give you an absolute number.
Q. And do you have that in hard form right now or do you have to do more work to make it happen?
A. I'd have to go back and reconstruct it and do more work.
Q. So as you sit here today, what you're relying upon is these three examples and what you recall from having run a partial recreation or review of these for Knudson?
A. When I looked at other hospitals, when I

looked at other technicians at the same time but with the document in front of me, I looked to see if Knudson was being used, and I don't remember how many I recorded or if I recorded all of them.

What I was looking for, I knew -- once I had enough to determine that pre- and post-1998 from the Whitehouse lab appeared different, which is not more than just those two or three different studies, I was confident that there were different predictors used before '98 and after '98.

When I looked at PFTs performed at other facilities, either they identify some other predicted value or they identify none at all. I didn't recall seeing any other facilities that recorded the name Knudson as the predictor that was being employed.

Q. To try to save us a little time --

A. Sure.

Q. -- because I think we've established the process that you went through on this, do you have the same concerns about the application of Intermountain and Miller norms to the other two aspects represented here in Dr. Whitehouse's study?

A. Those are not as easy to check, and I've not rendered any opinion on those.

Q. Okay. So simply Knudson.

Okay. If there are more sentences you want to go through, go ahead.

A. One that does deal with study design, and I'm trying -- maybe you can help me along, there was a statement that the population was representative of the Libby population. When I say "the population," the 123 was represented both in the Libby and the practice.

Q. I know exactly what you're saying. And I believe that, again, we can move forward on this one because Dr. Whitehouse has subsequently amended his opinions -- you can take my word for it, I think it's probably recorded in your report -- but amended that so that it reflects this is representative of the patient base -- or those patients already diagnosed with asbestos disease in Libby, not of the entire Libby population?

MR. STANSBURY: Objection; foundation.

Q. (By Mr. Lacey) Again, it's what --

A. Where is that located? So I can --

Q. It's the top of Page 221 on the top sector full sentence, "These subjects are representative of" --

A. Okay. Now, who is --

Q. And I believe Dr. Whitehouse in his

subsequent reports, I could dig it out here if we want to take the time, has amended it so it no longer -- well, the study is obviously locked in time, but these subjects are representative of -- I can find the exact wording. Just a moment.

Do you know which one of your opinions -- Okay. Here it is. "Results of the study applied to cohort of patients diagnosed with asbestos-related disease due to exposure to Libby asbestos in terms of increased risk for progressive loss of lung function from pleural changes alone or from potential future development of interstitial fibrosis."

So Dr. Whitehouse has -- and I think this may be what you were referring to at one point, how people brought things to his attention and subsequent changes occurred. That was one area, yes

A. Because that was one of my criticisms of the study design, is that it was not representative, and also I take issue if he is referring -- well, let me ask you, who is he referring to now that it's representative of?

Q. I believe it's that no longer the general population of Libby, Montana, instead it applies to the cohort of patients diagnosed with

asbestos-related disease due to exposure to Libby asbestos.

A. All right. So this gets us back to that word "cohort" where I was stating he has a cohort.

And if you don't know, just let me know, does that include -- is he saying this is now representative of the Peipins ATSDR group or is this representative of the 491 in his practice, the remaining -- the 550, the remainder of his practice? Who is he saying this is applicable to? What is that cohort?

Q. Again, as I read this statement -- and we've already demonstrated sometimes different interpretations can emerge from it -- "the cohort of patients diagnosed with asbestos-related disease due to exposure to Libby asbestos."

So I would ask you, would you interpret that to mean that it would apply to -- I'll represent to you that there are 1,800 patients at the CARD Clinic -- all 1,800 patients diagnosed with Libby asbestos-related disease, if that number grows to 1,805 by the end of week it applies to the 1805?

That's how I interpret it. I would ask you if you interpret it the same.

A. I don't know. I'm not sure what he is

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not lost anything.
Q. Correct.
A. Fair enough?
Q. Yes.
A. But let's go back now and drop this down to 5 feet, 6 inches tall because I've scratched it out with a pen in 1980, so I'm now 5 feet, 6 inches tall and in 1980 I should have blown out 4 liters, which is the amount that I'm blowing out, which would be the proper amount roughly at that height.
Are you with me?
Q. Uh-huh.
A. I blew out 4 liters, which is what I blew out the first time. All I did was drop my height.
In 1980 I'm 100 percent, not 80 percent. And now as opposed to improving -- if I drop in height on my first number, I will appear more normal in the past than I otherwise would have and, thus, that may increase my spread.
Q. And how many patients did you see records --
A. Lots. I will have to go back and recreate that, but I've provided examples in the PowerPoints.
And this is a real problematic issue because you're dealing both with changes in age and in height, and you can see the height fluctuates

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fairly dramatically. That's one issue.
The other problem that I have is if you look at any example, Dr. Whitehouse changes the height, he changes the predicted value, but he does not change the percent predicted on the form, so I don't know what he entered into a computer or if -- his measurement is on the PFT form itself. He does not change the percent predicted even though he's changed the actual predicted values. He never changed those.
Q. And these are the records that you've reviewed. You're not certain necessarily they're the ones that made their way into the 246?
A. There's a lot of them. I would assume since he puts in his paper, he acknowledges what he did with height, some of these were first and last. That's number one.
Number two, even a more disturbing problem, is that if you take the -- what we call the L550, which is patient practice, it does not appear that after recognizing these problems for the purpose of this paper that he went back and made changes in the patients' charts as part of the medical record because the records and the charts don't have these adjustments in most of the charts that I've reviewed.

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So, in other words, you have changes were made for the purpose of publication in some set of records, but I don't see -- and maybe they're there, but on the patient charts that were provided to me on the same patient, there are no changes at all.
Q. These patient charts, they're the 550?
A. Yes.
Q. And those are things that you're relying upon now to conclude that Dr. Whitehouse has problems with this study?
A. They are charts I've reviewed again recently to document, and I've gone back now and looked at the original charts and the original patient charts that I have and the PFTs that I have on my computer that were scanned in, the actual PFT reports, and have reconfirmed that these are problematic.
Q. And the 550 set of records, when did you receive those?
A. They were on a CD that I received several years ago, those 550.
Q. Any of those records in your --
A. Yes.
Q. Some of them, but not all, you've provided a few demonstrative examples?

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A. That's correct. In fact, there is a -- there is one PowerPoint that's entitled --
Wait. Here is the quote from Dr. Whitehouse's deposition. This was taken on September 6th, 2002, it's on Page 21. I believe it's Number 9, Page 21.
Q. Uh-huh. Okay.
A. The deposition says, "So we had to make sure the ages were correct on everyone so that they didn't screw up on age" --
In fact, they had problems with age because of this computer glitch."
And it says, "and make sure the heights were correct because until three or four years ago I didn't make them measure everybody, and if you ask people what their height is they all lie."
Q. And, of course, this testimony in September of 2002 isn't necessarily with this study in front of him, is it? This was 2004.
A. Correct. But the last PFT that was done was in 2001.
Q. So assuming that we actually have these patients with this problem of height being adjusted inappropriately as you've described, it would be relevant to the study?

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A. Correct. In fact, Dr. Whitehouse says that he made that adjustment, quote, "to match across study dates," on Page 220 in the first -- second paragraph there.

Q. Okay.

A. Okay?

Q. Any other --

A. Well, let me go ahead and cite another document which is also from the same deposition.

He was asked -- he said -- the question was, "In going through there, I saw there were sometimes significant variations in height."

The answer was: "That was all corrected in the finished data."

And the question: "Which way did you correct?"

And here was his answer: "I corrected it basically the old one back to the height that we measured because we'd been measuring heights now for the last few years. And so what they had done was they probably had some errors in heights on some of the older ones and we used the same height."

And then he later goes on to say it really didn't matter to him whether they changed the old one or the new one in another quotation.

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Q. These all reflect on the reliability of the actual data --

A. Yes, sir.

Q. -- assuming that they were among the 123?

A. Yes, sir.

Q. Okay.

A. Then on age correction there should be a PowerPoint entitled "Age and Height."

Q. Number 4, I believe.

A. These provide some of the examples in height and age.

Q. I'm looking at ones in PowerPoint 4. Are those the ones you're relying upon?

A. There's one called -- Number 4 is one of them, sir, and then there is another one. There may be some duplication between these because, again, these were works in progress when I sent them in.

Q. Again, looking at Number 4, I see LP43.

A. Yes, sir.

Q. And it looks to me like there's numerous, far more than two PFTs; correct?

A. I believe so, yes, sir.

Q. And the same thing with the other one, LP67?

A. Yes, sir.

Q. We've got three different dates there?

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A. Yes, sir.

Q. So whatever the error, again, we're at risk that some or all of these were not actually included among the 246?

A. Again, these are simply demonstrative aids. They're not intended to represent everything.

Q. Can you tell me how many records had this problem?

A. No, sir, not off the top of my head.

Q. Is it reflected in a database or hard copies?

A. I'd have to go look and see if I could find that. Often I would simply make accumulations of examples for demonstrative purposes as opposed to calculating, but I will check on it.

Q. Any other challenges you want to bring up with reliability in the study?

A. Yes, sir. The methodology used for the x-ray interpretation.

Q. Where does x-ray interpretation become an important factor in evaluation of PFTs?

A. Well, this is supposed to be a study that is based on pleural abnormalities, which are an x-ray finding. PFTs don't tell you the source. As you mentioned, they measure impairment.

In order to assess the type of --

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whether this represents pleural disease and to compare Dr. Whitehouse's findings to those of the multiple peer-reviewed articles that he has put in his bibliography both in the Progression Study and later in his expert report, they have all employed ILO standards, except for Wang who is from China where they don't use the ILO.

Q. Do you --

MR. SACKETT: Could I just interject for a second? I think that we're getting quite close to having been going for seven hours. We started at 9:05. It's after 5:05 now. I think we're probably running pretty close to the end.

MR. LACEY: Are you terminating the deposition?

MR. SACKETT: Not yet. I'm letting you know we're getting pretty close.

MR. LACEY: Do you want to tell me a time when you're going to make this determination?

THE WITNESS: How much longer do you have, do you think?

MR. LACEY: I have a couple areas, but, again, it's important I hear from you, as you put it, if you don't say it now, it's not going to be disclosed for later.